

THE NOMADINE AND EPEOLINE BEES OF SOUTHERN MAINE.

BY J. H. LOVELL AND T. D. A. COCKERELL.

In southern Maine (Waldoboro, Lincoln County) the Nomadine and Epeoline bees are represented by only two genera *Nomada* and *Triepeolus*. The species are few and individual specimens are taken at rare intervals. The species of *Nomada* begin flying as early as April 24th, visiting the aments of *Salix discolor*, which with the exception of the Mayflower is the first nectariferous plant blooming in this locality; and continue on the wing as late as July 30th, when they have been taken on the inflorescence of *Aralia hispida*. All of the specimens of *Triepeolus* have been collected in August on the flowers of the *Compositae*.

Nomada.

The species of *Nomada* run into local races and species in different parts of the country, and the Maine species possess certain peculiarities of their own. Two are distinct enough to be treated as new species, though it is not impossible that the discovery of intermediates in localities still unexplored for bees may eventually cause them to be reduced to subspecific rank. Two others, here called varieties, may prove more separable than is here supposed, when larger series have been obtained.

Nomada (Gnathias) bella Cr.1863 *Nomada bella* Cr. ♀ ♂ Proc. Ent. Soc. Phil. 2: 287.1863 *Nomada maculata* Cr. ♀ ♂, Proc. Ent. Soc. Phila. 2:303 (in part).1902 *Nomada bella* Rob. ♀ ♂, Ent. News, 13: 80, no. 3.1903 *Nomada bella* C'kll. ♀ ♂, Proc. Ac. Nat. Sci. p. 601.

Variety a of *N. maculata* ♀ was based on five specimens from Maine, Conn., Penn., and Delaware. The local specimens correspond in every particular to the description except that the spots on the fifth segment are obsolete as well as those on the fourth. The characters of the males are also similar to those given by Cresson. Length 10 to 11 mm.; mandibles bidentate; the largest species in this locality. Taken from April 24th to July 11th. Early in the season they are visitors to the willows *Salix discolor* and *S. Bebbiana*. Male and female specimens of *N. bella* from Elkhart, Indiana, are the same as the local species except that the cream-colored spots on the apical segments are usually well developed.

Nomada (*Gnathias*) *cuniata* Rob. var. e.

1903 *Gnathias cuneatus* Rob. ♀ ♂, Can. Ent. 35: 175, no. 6.

♀. — Length 8mm.; mandibles bidentate; resembles *N. bella* but is smaller, with thorax trilineate. Head and thorax red, not coarsely punctured; white pubescence on cheeks and pleura long; a black dot on each side of clypeus, the area about the insertion of antennæ and ocelli black, a red spot on supra-clypeus; occiput black; antennæ ferruginous, fourth joint longer than third. Mesothorax trilineate, the middle band broad; scutellum and post-scutellum red, sutures black; pleura black above with a red spot, red below; metathorax with broad black bands at the sides and in the center; tegulae and tubercles ferruginous. Legs red; upper third of anterior and middle femora black beneath; posterior femora blackened behind. Wings dusky, apical margin darker; pale lunule distinct; basal nervure basal transverse medial nervure more than the length of the latter; third transverse cubital nervure strongly angulated in the middle. Abdomen red, broad, strongly convex; black area on basal segment lobed in the center; a pair of small cream colored spots on the sides of second segment; apical segments without markings.

Waldoboro, Maine, May 18.

Nomada (*Xanthidium*) *subrutila* n. sp.

♂. — Basal nervure meeting transverse medial; flagellum obscurely denticulate, lively ferruginous beneath; supra-clypeal mark well developed, surrounded by black; orbits yellow except at summit behind; third antennal joint on the short side much shorter than fourth; scutellum black with two small yellow spots; metathorax entirely black; tegulae light yellow, with a hyaline center and margin; band on first abdominal segment broadly interrupted, the posterior part of the interval reddish; bands on second and third segments not at all interrupted; anterior and middle tibiae yellow, with a black or dark brown mark behind. Other characters as in *N. luteola* and *N. luteoloides*; size that of a rather small *luteola*.

One male taken on *Viola rotundifolia* May 4th. The species recognized in this group are very closely allied, but the present one seems as distinct as any, *Nomada Cressonii* Rob.

1863 *Nomada maculata* Cr. ♀, var. b, Proc. Ent. Soc. Phil. 2:304.

1893 *Nomada Cressonii* Rob. ♀ ♂ Trans. Am. Ent. Soc. 20:275.

This species has been taken on *Viburnum Alnifolium* and *Cornus Canadensis* from May 19th to July 11th.

Nomada florilega n. sp.

♀.—Length about 8 mm.; black and red, rather robust. Face, cheeks and pleura clothed with white pubescence, sides of metathorax fringed with long white hair. Mandibles except apices which are darkened, labrum, clypeus, usually a narrow line along the orbits, and vertex red; face, region of ocelli, cheeks and occiput black; flagellum ferruginous in front, blackened behind, third joint shorter than fourth. Tegulae and tubercles ferruginous; mesothorax dark red tinged with black, with a rather broad median longitudinal line; sutures black; metathorax entirely black, pleura black above with a middle red spot, red below. Legs red, coxae largely black; upper half of anterior and middle femora black beneath; posterior femora blackened behind except at extreme apex; first and second joints of hind tarsi blackened without. Wings dusky, strongly darkened on apical margins; stigma ferruginous, outer half darker than the inner; basal nervure basad transverse medial; second submarginal cell about one half as wide on the radius as on the cubitus; second and third transverse cubital nervures strongly curved; lunule rather prominent. Abdomen oval or oblong oval, convex; basal half of first segment black, posterior margin of black area cordate; a pair of small cream-colored spots on the sides of segment two; on segment three two minute dots; apical segments without ornaments.

Taken on *Aralia hispida* and *Spiraea salicifolia* during the latter half of July. Nearest *N. sayi*, but larger and darker, the metathorax being entirely black, and the red of the coarsely sculptured mesothorax very dark.

Nomada nigrocincta Smith, var. d.

1879 *Nomada nigrocincta* Sm. ♀ Des. New Sp. Hym. p.99.

♀.—Length 8mm.; ferruginous and black. Head and thorax rather finely punctured; pubescence on cheeks, pleura and sides of metathorax white, on face and disc of mesothorax fuscous. Mandibles except tips, labrum, clypeus, spot on supra-clypeus, a narrow stripe around the eye, and antennæ ferruginous; area about insertion of antennæ, about ocelli and occiput black. Prothorax black; mesothorax trilineate, the middle band rather broad; scutellum largely red, post-scutellum black; metathorax entirely black; pleura black, red spot beneath the wings, another anteriorly on each side of the forelegs; tegulae and tubercles ferruginous. Legs ferruginous, marked with black much as in the preceding species, Wings nearly hyaline, slightly dusky at apex; basal nervure very little basad of transverse medial, much less than in the preceding species; second submarginal cell along the radius nearly as long as second transverse cubital nervure; third submarginal along the radius fully one half as long as second submarginal

Abdomen oblong-ovate, ferruginous, without maculae, the apical margins fuscous or blackened; posterior margin of black area on basal half of first segment straight; pygidial plate broad and rounded.

Collected May 18th. Distinguished by its color from any other of the local species. This may represent a distinct race, but the single specimen obtained has the essential characters of Smith's species, and is really more typical of it than the insect from Corvallis, Oregon, which has been referred here.

Triepolus.

Triepolus donatus Smith.

- 1854 *Epeolus donatus* Sm. ♀ ♂, Cat. Hym. Brit. Mus. 2:256.
 1864 *Epeolus donatus* Cr. ♀ ♂, Proc. Ent. Soc. Phil. 2:396.
 1882 *Epeolus donatus* Prov. ♀, Nat. Can. 13:236.
 1883 *Epeolus donatus* Prov. ♀, Faun. ent. Can. Hym. p. 719.

Though rather rare this species is more common in this locality than any other of this genus or of *Nomada*. Both sexes have been taken from August 11th to August 24th on the goldenrods, thistles, *Inula Helenicum* and *Eupatorium perfoliatum*.

Triepolus scutellaris Say.

- 1824 *Epeolus scutellaris* Say, ♀, Long's 2nd Exp. 2:355.
 1859 *Epeolus scutellaris* Say, ♀, Lec. ed. Say's Writ. 2:240.
 1864 *Epeolus scutellaris* Cr. ♀, Proc. Ent. Soc. Phil. 2:397.
 1888 *Epeolus scutellaris* Prov. ♀, Add. faun. Can. Hym. p. 332.
 1897 *Epeolus scutellaris* Rob. ♀ ♂, Trans. Ac. Sci. St. Louis, 7:343.

Two males taken on *Solidago* in August are referred to this species, which has been reported from Florida to Canada. They agree with the description in size and in the form of the dilated thoracic teeth, but not entirely in color. The mandibles, tubercles, tegulae, lateral teeth, scutellum in one specimen, and legs are ferruginous; but the antennae and basal segments of the abdomen are black.

Triepolus pectoralis Rob.

- 1897 *Epeolus pectoralis* Rob. ♀ Trans. Ac. Sci. St. Louis, 7:345.

Both sexes taken on the flowers of *Solidago* August 17th. The female has the mesothorax closely and finely punctured, and the pleura below coarsely and sparsely punctured. The male is undescribed.

♂. — Length about 8mm., closely resembles the female. The face clothed with silvery white, the pleura and pectus with cinereous pubescence. Ornaments of thorax and abdomen buff-colored, fascia of sixth segment white.